

What is claimed is:

- Sub  
a1
1. A method for reducing the pain associated with penetration of the skin of a patient at a site with a needle or surgical instrument, comprising urging a skin engaging surface of a pressure member against the skin of a patient proximate the site, to thereby stimulate the large diameter afferent sensory nerve fibers in the skin proximate the site and at least partially block pain signals from the small diameter afferent pain nerve fibers in the skin proximate the site.
  - 10 2. The method of claim 1, wherein the skin engaging surface of the pressure member is urged against the skin proximate the site shortly prior to or at the same time as that the needle or surgical instrument contacts the skin at the site.
  - 15 3. The method of claim 1, wherein the pressure member is comprised of a flexible material.
  4. The method of claim 1, wherein the pressure member is comprised of a flexible, polymeric material.
  - 20 5. The method of claim 1, wherein the pressure member is comprised of a rigid material.
  6. The method of claim 5, wherein the pressure member is comprised of metal.
  - 25 7. The method of claim 1, wherein the skin engaging surface of the pressure member extends about an aperture formed in the pressure member, and the needle or surgical instrument is introduced through the aperture to contact the skin at the site.
  8. The method of claim 1, wherein the skin engaging surface is comprised of a plurality of projections extending from said pressure member.
  - 30

09919202-073101  
TOTAL 20267660

9. The method of claim 8, wherein the ends of the projections are blunt relative to the end of the needle or surgical instrument being employed.

10. The method of claim 1, wherein the perimeter of the pressure member is formed with at least one noncircular section to facilitate handling of the pressure member.

11. The method of claim 10, wherein the perimeter of the pressure member defines a generally cloverleaf shape.

12. The method of claim 1, wherein when the skin engaging surface of the pressure member is urged against the skin proximate the site, the skin engaging surface substantially conforms to the contours of the skin proximate the site.

13. An apparatus for reducing the pain associated with penetration of the skin of a patient at a site on the skin with a needle or surgical instrument, comprising a pressure member having a skin engaging surface adapted to be pressed against the skin of a patient proximate the site to stimulate the large diameter afferent sensory nerve fibers in the skin proximate the site and at least partially block pain signals from the small diameter afferent pain nerve fibers in the skin proximate the site.

14. The apparatus of claim 13, wherein the pressure member is comprised of a flexible material.

15. The apparatus of claim 13, wherein the pressure member is comprised of a flexible, polymeric material.

16. The apparatus of claim 13, wherein the pressure member is comprised of a rigid material.

17. The apparatus of claim 16, wherein the pressure member is comprised of metal.

18. The apparatus of claim 13, wherein the skin engaging surface of the pressure member extends about an aperture formed in the pressure member, the aperture being adapted to have the needle or surgical instrument introduced therethrough to contact the skin at the site.

5

19. The apparatus of claim 18, wherein the aperture is generally circular in shape.

20. The apparatus of claim 18, wherein the aperture is generally oval or elliptical in shape.

10

21. The apparatus of claim 18, wherein at least a portion of an upper edge of the aperture is chamfered, thereby facilitating introduction of the needle or surgical instrument at an angle to the plane of the skin at the site.

15

22. The apparatus of claim 13, wherein the skin engaging surface is comprised of a plurality of projections extending from said pressure member.

23. The apparatus of claim 22, wherein the ends of the projections are blunt relative to the end of the needle or surgical instrument being employed.

20

24. The apparatus of claim 22, wherein the ends of the projections are generally conical in shape.

25. The apparatus of claim 13, wherein the perimeter of the pressure member is formed with at least one noncircular section to facilitate handling of the pressure member.

25

26. The apparatus of claim 25, wherein the perimeter of the pressure member is formed with at least two scallops.

27. The apparatus of claim 25, wherein the perimeter of the pressure member defines a generally cloverleaf shape.

30

09919202-073101

28. A method for reducing the pain associated with penetration of the skin of a patient at a site on the skin with a needle or surgical instrument, comprising urging a skin engaging surface of a pressure member against the skin of the patient proximate the site,  
5 the skin engaging surface being comprised of a plurality of projections extending from the pressure member, to thereby stimulate the large diameter afferent sensory nerve fibers in the skin proximate the site and at least partially block pain signals from the small diameter afferent pain nerve fibers in the skin proximate the site.

10 29. The method of claim 28, wherein the skin engaging surface of the pressure member extends about an aperture formed in the pressure member, and the needle or surgical instrument is introduced through the aperture to contact the skin at the site.

15 30. The method of claim 28, wherein the ends of the projections are blunt relative to the end of the needle or surgical instrument being employed.

20 31. An apparatus for reducing the pain associated with penetration of the skin of a patient at a site on the skin with a needle or surgical instrument, comprising a pressure member having a plurality of projections extending therefrom, the projections being adapted to be pressed against the skin of the patient proximate the site to stimulate the large diameter afferent sensory nerve fibers in the skin proximate the site and at least partially block pain signals from the small diameter afferent pain nerve fibers in the skin proximate the site.

25 32. The apparatus of claim 31, wherein the projections of the pressure member are disposed about an aperture formed in the pressure member, the aperture being adapted to have the needle or surgical instrument introduced therethrough to contact the skin at the site.

30 33. The apparatus of claim 31, wherein the ends of the projections are blunt relative to the end of the needle or surgical instrument being employed.



41. An apparatus for reducing the pain associated with an injection at a site on the skin of patient with a hypodermic syringe, comprising:

a pressure member having a skin engaging surface adapted to be pressed against the skin of a patient proximate the site to stimulate the large diameter afferent sensory nerve fibers in the skin proximate the site and at least partially block pain signals from the small diameter afferent pain nerve fibers in the skin proximate the site;

a syringe retainer adapted to be secured to a syringe; and

a least one resilient member resiliently securing the pressure member to the syringe retainer, said resilient member being adapted to be compressed under the force used to administer an injection to a patient, allowing a reduction in the distance between the pressure member and the syringe retainer.

42. The apparatus of claim 41, wherein the at least one resilient member is comprised of at least one spring.

43. The apparatus of claim 42, wherein the spring is comprised of a helical spring.

44. The apparatus of claim 41, wherein the skin engaging surface of the pressure member extends about an aperture formed in the pressure member, the aperture being adapted to have the needle of the hypodermic syringe introduced therethrough to contact the skin at the site.

45. The apparatus of claim 44, wherein the aperture is generally circular in shape.

46. The apparatus of claim 44, wherein at least a portion of an upper edge of the aperture is chamfered.

47. The apparatus of claim 41, wherein the skin engaging surface of the pressure member is comprised of a plurality of projections extending from said pressure member.

48. The apparatus of claim 47, wherein the ends of the projections are blunt relative to the end of the needle of the syringe.

5 49. The apparatus of claim 47, wherein the ends of the projections are generally conical in shape.

50. The apparatus of claim 41, wherein the syringe retainer is comprised of a retaining ring that is of a size and shape to receive the end of the syringe in a friction fit.

10 51. The apparatus of claim 41, wherein the syringe retainer is comprised of a mechanical stop that abuts a portion of the syringe, thereby preventing axial movement of the syringe relative to the syringe retainer in the direction of the pressure member.

52. The apparatus of claim 41 affixed to a hypodermic syringe.

15 53. The apparatus of claim 52, wherein the syringe is an insulin syringe.

09319203-073101  
FOIE 20261660